REMARKS

This is a full and timely response to the outstanding final Office Action (Paper No. 15) mailed February 6, 2004. Claims 5, 6, 9, 12, 13, 15 - 19, and 22 have been cancelled in previous amendments without prejudice, waiver, or disclaimer. Claims 4 and 11 are canceled in this amendment without prejudice, waiver, or disclaimer. Claims 1 and 7 have been amended. The subject matter of amended claims 1 and 7 is contained within FIGs. 5 – 13 and the related detailed description of the specification. Consequently, no new matter has been added to the application.

FIG. 5 has been amended to correct column labels. The corrected labels in the table of FIG. 5 correspond to respective values generated by the carry-save adder illustrated in FIG. 4. Accordingly, no new matter has been introduced to the application.

Upon entry of the amendments in this response, claims 1, 2, 7, 8, and 10 remain pending. Claims 1, 2, 7, 8, and 10 are patentable over the cited art of record. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Claim Rejections Under 35 U.S.C. 112

A. Statement of the Rejection

The Office Action indicates that claims 1, 2, 4, 7, 8, 10, and 11 stand rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failure to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 7, the rejection alleges that the term "in accordance" is unclear.

Concerning claims 2, 4, 8, 10, and 11, the rejection indicates that these dependent claims are allegedly unclear for the reason that they depend from claims 1 and 7.

B. Discussion of the Rejection

Applicant has canceled claims 4 and 11. Thus, the rejection of claims 4 and 11 is rendered moot.

Applicant has amended independent claims 1 and 7 to more clearly point out and distinctly claim the subject matter of claims 1 and 7. Specifically, claims1 and 7 have been amended to strike the term "in accordance." Thus, claims 1 and 7 no longer include the allegedly unclear term and the rejection to claims 1 and 7 should be withdrawn.

Because independent claims 1 and 7 no longer include the allegedly unclear term, the rejection of dependent claims 2, 8, and 10 should also be withdrawn.

II. Claim Rejections Under 35 U.S.C. 102

A. Statement of the Rejection

The Office Action indicates that claims 1, 2, 4, 7, 8, 10, and 11 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Bradley (U.S. Patent No. 6,496,846), hereafter *Bradley*.

B. Discussion of the Rejection

Applicant has canceled dependent claims 4 and 11. Thus, the rejection of claims 4 and 11 is rendered moot.

Applicant respectfully submits that the subject matter of amended claims 1, 2, 7, 8, and 10 is not anticipated by *Bradley*.

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior-art reference disclose each element, feature, or step of the claim. See *e.g.*, *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 7 USPQ2d 1129 (Fed. Cir. 1988). *Bradley* fails to disclose, teach, or suggest each element and/or method step in the claims.

1. Claims 1 and 2

Turning now to the specific claim rejections, claim 1 is exemplary. For convenience of analysis, independent claim 1, as amended, is repeated on the following page in its entirety.

> 1. An apparatus for performing the addition of a propagate, kill, and generate recoded numbers, said apparatus comprising:
>
> a circuitry configured to receive at least a first operand, a second operand, and a carry-in bit, ***the first and second operands comprising respective first and second propagate, kill, and generate recoded number representations of respective first and second binary operands***;
>
> ***a first carry-save adder configured to add said first operand and said second operand to generate a third propagate, kill, and generate recoded number representation and a carry-out bit***; and
>
> ***a modified carry-save adder*** configured to receive the third propagate, kill, and generate recoded number representation from the first carry-save adder, the carry-out bit, and the carry-in bit from the circuitry, ***add the separate propagate, kill, and generate bits of the third propagate, kill, and generate recoded number representation with the carry-out bit and the carry-in bit to generate a sum value and a carry value***.

(Applicant's independent Claim 1 - *Emphasis added.*)

Applicant respectfully asserts that *Bradley* fails to disclose, teach, or suggest at least the combination of emphasized elements as shown above. Consequently, claim 1 is allowable.

Bradley states that the Pin, Kin, and Gin bits are functions of the carry ins. Specifically, *Bradley* (see Abstract) states that the carry ins are encoded as Propagate (Pin), Kill (Kin), and Generate (Gin), with respect to the carry in bits to a block. Thus, *Bradley* apparently discloses a circuit and a method that encodes the carry-in bit as well as the operand bits for a binary addition of two streams of bits. (See Abstract and FIG. 1 of *Bradley*.) As apparently shown in FIG. 1, the circuit of *Bradley* includes an 8-bit encoder and a 8-bit adder that produce a first SUML and its compliment SUMH, as well as a 5-bit encoder and a 5-bit adder that produce a second SUML and its compliment SUMH. As apparently shown in *Bradley*, the 5-bit SUMH and SUML results are concatenated to the 8-bit SUMH and SUML results.

First, the statement of the rejection alleges that lower significant bit segment 102 discloses circuitry configured to receive at least a first operand and a second operand (bits 0 to 7 of operands A and B). Applicant agrees.

However, Applicant disagrees that the lower significant bit segment 102 of *Bradley* discloses Applicant's claimed circuitry. The lower significant bit segment 102 of *Bradley* does not "receive" Applicant's claimed "***first and second operands comprising respective first and second propagate, kill, and generate recoded number representations of respective first and second binary operands***," as alleged in the statement of the rejection. As clearly illustrated in FIG. 1, the lower significant bit segment 102 of *Bradley* receives first and second operands A and B. *Bradley* does not disclose, teach, or suggest that operands A and B are propagate, kill, generate recoded numbers. For at least this first reason, *Bradley* fails to anticipate claim 1. Thus, claim 1 is allowable and the rejection should be withdrawn.

Second, the statement of the rejection adds that the output of box 106-1 teaches first and second operands comprising respective first and second propagate, kill, and generate recoded number representations. Applicant disagrees. The output of box 106-1, as illustrated in FIG. 1 of *Bradley*, clearly shows that encoder 106-1 produces a single propagate, kill, and generate recoded number. A single propagate, kill, and generate recoded number cannot disclose, teach, or suggest "***respective first and second propagate, kill, and generate recoded number representations of respective first and second binary operands***." For at least this additional reason, *Bradley* fails to anticipate claim 1. Thus, claim 1 is allowable and the rejection should be withdrawn.

Third, the statement of the rejection continues by alleging that encoding generator 105 including boxes 107-1, 108-1, and 109-1 teaches Applicant's first carry-save adder. Applicant respectfully disagrees. Applicant has amended the first carry-save adder to clarify that the Applicant's first carry-save adder generates "***a carry-out bit***." As stated above, *Bradley* apparently discloses a circuit and a method that encodes the carry-in bit as well as the operand bits for a binary addition of two streams of bits. Column 4, lines 24-34 describe a preferred embodiment as follows below.

> "In a preferred embodiment, Pin, Kin and Gin signals are used to represent the conditional carry in to each bit of the operands being added. The Pin signal is true where a bit has a carry in that is the same as the carry in to the block, i.e., the carry in to the block is propagated up to the bit.

> The Kin signal is true where a carry in to a bit is zero regardless of the carry in to the block, i.e. any carry in to the block is killed before it gets to the bit. The Gin signal is true where a bit has a carry in of one regardless of carry in to the block, i.e., the carry in to the bit is generated within the block."

(*Bradley* - column 4, lines 24-34.)

The preferred embodiment described above, as well as the equations for determining Pin, Kin, and Gin (column 4, lines 42-48) do not disclose, teach, or suggest generating "***a carry-out bit***" from the addition of the first and second operands. Thus, boxes 107-1, 108-1, and 109-1 cannot disclose, teach, or suggest Applicant's claimed first carry save adder. For at least this third reason, *Bradley* fails to anticipate claim 1. Thus, claim 1 is allowable and the rejection should be withdrawn.

Fourth, the statement of the rejection alleges that sum generator 106 teaches Applicant's claimed modified carry-save adder. Applicant respectfully disagrees. Applicant has amended the modified carry-save adder to clarify that the Applicant's claimed "modified carry-save adder configured to ... ***add the separate propagate, kill, and generate bits of the third propagate, kill, and generate recoded number representation with the carry-out bit and the carry-in bit to generate a sum value and a carry value.***"

Because *Bradley* fails to disclose, teach, or suggest Applicant's claimed "***first carry-save adder configured to add said first operand and said second operand to generate a third propagate, kill, and generate recoded number representation and a carry-out bit.***" Bradley cannot disclose, teach, or suggest Applicant's modified carry-save adder that generates a sum and a carry value by adding "***the separate propagate, kill, and generate bits of the third propagate, kill, and generate recoded number representation with the carry-out bit and the carry-in bit.***" For at least this fourth reason, *Bradley* fails to anticipate claim 1. Thus, claim 1 is allowable and the rejection should be withdrawn.

Because independent claim 1 is allowable, as argued above, dependent claim 2 is also allowable. *See In re Fine,* 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, Applicant respectfully requests that the rejection of claims 1 and 2 be withdrawn.

2. Claims 7, 8, 10, and 11

Claim 7 is also exemplary. For convenience of analysis, independent claim 7, as amended, is repeated below in its entirety.

> 7. A method for processing propagate, kill, and generate representations of respective first and second binary operands, comprising:
> receiving a carry-in value and a first and a second propagate, kill, and generate representation of respective first and second binary operands;
> ***adding the first and second propagate, kill, and generate representations to generate a third propagate, kill, and generate representation and a carry-out value***; and
> ***mathematically combining the third propagate, kill, and generate representation with the carry-out value and the carry-in value to generate a sum value and a carry value***.

(Applicant's independent Claim 7 - *Emphasis added.*)

Significantly, *Bradley* fails to disclose, teach, or suggest "***adding the first and second propagate, kill, and generate representations to generate a third propagate, kill, and generate representation and a carry-out value***" as recited in Applicant's claim 7. As shown above, concerning the allowability of Applicant's independent claim 1, encoder 105 including boxes 107-1, 108-1, and 109-1 does not disclose, teach, or suggest generating a carry-out value. Consequently, *Bradley* does not disclose, teach, or suggest at least this limitation of Applicant's claim 7. For at least this reason, *Bradley* fails to anticipate claim 7. Thus, claim 7 is allowable and the rejection should be withdrawn.

Because *Bradley* fails to disclose, teach, or suggest adding the first and second propagate, kill, and generate representations to generate a third propagate, kill, and generate recoded number and a carry-out value, *Bradley* cannot disclose Applicant's claimed method step of "***mathematically combining the third propagate, kill, and generate representation with the carry-out value and the carry-in value to generate a sum value and a carry value***." For at least this separate and independent reason, *Bradley* does not anticipate Applicant's claim 7.

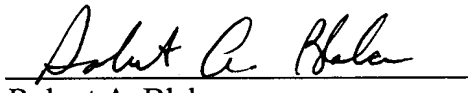
Because independent claim 7 is allowable, as argued above, dependent claims 8 and 10 are also allowable. *See In re Fine, supra*. Accordingly, Applicant respectfully requests that the rejection of claims 7, 8, and 10 be withdrawn.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 1, 2, 7, 8, and 10 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby requested. If the Examiner believes that a telephone conference would expedite the prosecution of the application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.

By: 

Robert A. Blaha
Registration No. 43,502

THOMAS, KAYDEN,
HORSTEMEYER & RISLEY, L.L.P.
Suite 1750
100 Galleria Parkway N.W.
Atlanta, Georgia 30339
(770) 933-9500

APPENDIX A

ANNOTATED DRAWING SHEET

AND

SUSTITUTE DRAWING SHEET

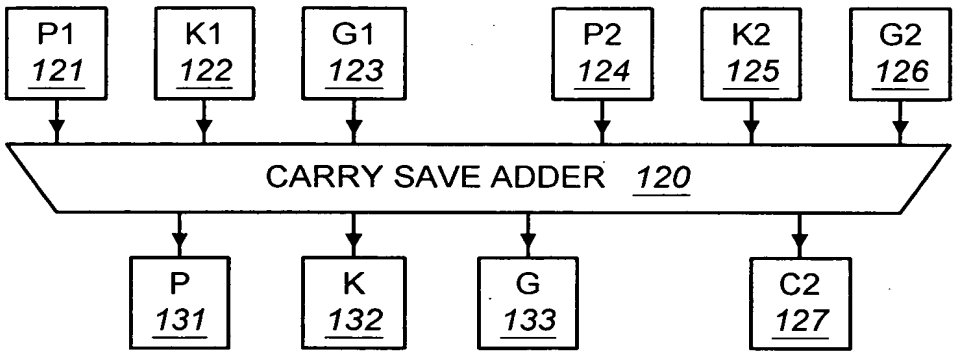


FIG. 4

G1 *123*	P1 *121*	K1 *122*	G2 *126*	P2 *124*	K2 *125*		~~C2~~ ~~K1~~ *127*	G2 *133*	P2 *131*	K2 *132*
0	0	1	0	0	1		0	0	0	1
0	0	1	0	1	0		0	0	1	0
0	0	1	1	0	0		1	0	0	1
0	1	0	0	0	1		0	0	1	0
0	1	0	0	1	0		0	1	0	0
0	1	0	1	0	0		1	0	1	0
1	0	0	0	0	1		1	0	0	1
1	0	0	0	1	0		1	0	1	0
1	0	0	1	0	0		1	0	0	0

FIG. 5